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Title Visual Graphical Indication Of The Number Of Remaining Characters
In An Edit Field Of An Electronic Device

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SIR:

Enclosed is the certified copy of the German patent application number
102 32 907.9 filed on July 19, 2002 in order to support a claim to priority on the
above-subject U.S. patent application.

Respectfully,

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Prioritätsbescheinigung über die Einreichung einer Patentanmeldung

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Bezeichnung: Visual graphical indication of the number of remaining characters in an edit field of an electronic device

IPC: G 06 F 3/00

Die angehefteten Stücke sind eine richtige und genaue Wiedergabe der ursprünglichen Unterlagen dieser Patentanmeldung.

München, den 29. Juli 2003
Deutsches Patent- und Markenamt
Der Präsident
Im Auftrag

Stech

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02OP 0143DEP

Agere Systems Inc.

Visual graphical indication of the number of remaining
characters in an edit field of an electronic device

Description

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The invention relates to a method and to an implementation software product for visually indicating the amount of characters, which can be still entered into an edit field of an electronic device, and to an electronic device having such functionality.

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Usually, when entering data in an edit field of an electronic device, such as in an alphanumeric field of a mobile phone for example, there is often no indication for the user how many characters are still remaining for entering before the edit field is filled up and/or the amount entered characters that can be processed all at once in a subsequent common processing step is reached.

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The only known solutions are based on a numerical indication, such as displaying the number of already typed characters or the number of remaining characters. However, one of the main problems with regard to such numerical indications is, that a user of the electronic device usually has difficulties in using these indications, since users normally do not think in terms of „characters“ when they are writing a text, especially when writing a longer text.

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Accordingly, a main object of the invention is, to provide a

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new and improved indication of the amount of remaining capacity for entering data in an edit field of an electronic device.

5 The inventive solution of the object is achieved by a method incorporating the features of claim 1, by an electronic device incorporating the features of claim 6 and/or by an implementation software product incorporating the features of claim 12.

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Advantageous and/or preferred embodiments or refinements are the subject matter of the respective dependent claims.

Accordingly the invention proposes a method for indicating
15 the amount of data, in particular of characters, which can be entered in an edit field of an electronic device merely allowing a predefined amount of entered data for a common subsequent processing, by graphically visualizing the available capacity of the edit field.

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Thus, in particular by using an electronic device having an edit field, means for entering data, preferably characters, into the edit field and means for processing a predefined maximal number of entered data all at once, wherein the
25 device comprises a graphical element associated to the edit field for graphically visualizing the capacity available for entering data in the edit field and/or by using an implementation software product adapted to perform the inventive method, especially implemented within the afore
30 stated device, a user is much more supported when writing a text, since he can evaluate from such kind of indication information how much empty space he has still available to express what he wants.

Preferably, the graphical indication is achieved by a graphical element associated to the edit field with its look changeable in functional dependency to the available space or capacity.

For the practice it is particularly proposed to divide the graphical element into two areas wherein the percentage each of the two areas is changed in functional dependency to the used capacity or to the still remaining capacity.

Additionally or as an alternative, the graphical element may be divided in several sub-portions, each of which is representing a predefined amount of capacity, so that for every amount of capacity already used one of these sub-portions is visually displayed, filled up or deleted.

According to a very preferred embodiment it is further proposed to change the look of a text cursor proportional to the number of remaining characters which can be still entered, since the attention of the user normally is focused already on the text cursor while he is writing the text.

Even the invention is preferably conceived for mobile phones, the invention can be similarly used in any electronic device where the user is prompt to enter a text, especially long texts, to paint pictures and/or to enter other data.

The invention is further proposing an implementation software product designed to perform or at least to support the inventive approach.

Subsequently the invention is exemplary described with regard to preferred embodiments and with regard to the attached drawings,
in which:

FIG. 1a is schematically showing a first inventive example of the change of a graphical element look for proportionally indicating the amount of remaining characters,

FIG. 1b is schematically showing a second inventive example of the change of a graphical element look for proportionally indicating the amount of remaining characters, and

FIG. 2 is schematically showing a mobile phone as a preferred embodiment of an electronic device incorporating the inventive graphical element according to FIG. 1a as a text cursor.

Regarding first FIG. 2, a mobile phone as a preferred embodiment for the inventive electronic device is schematically depicted. However, it is mentioned that the electronic device can be, in substantial, any electronic device having an edit field for visually entering data, such as characters for writing a text message. Accordingly, further preferred applications for the invention are electronic devices like a personal computer or a note book or a PDA (Personal Digital Assistant).

In practice, the mobile phone according to FIG. 2 is proposed to be adapted to operate on a GSM-standard (Global System for Mobile Communication) or UMTS-standard (Universal Mobile Telecommunication System) and is preferably adapted to support GPRS (General Packet Radio Services).

Regarding the inputting of characters with regard to the mobile phone as depicted in FIG. 2 in more detail, the mobile phone has an edit field 11, for entering, editing and visualizing entered characters. The characters are entered by pressing respective keys of a keyboard 12. However, even the

entering of characters by using a microphone 13 connected with a speech control implemented within the electronic device or by using a touch screen monitor for entering the characters into the edit field is comprised by the invention.

5

The entered characters may be part of a text message to provide a so-called SMS (Short Message Service), since the exchange of text messages between different mobile phones has become very popular. In particular young people use the GSM-
10 based SMS service very frequently to communicate with their peer group.

For sending the SMS-message, first a respective menu item implemented within the mobile phone is selected by
15 correspondingly manually pressing at least one of the selection keys 14 for subsequently entering the text message by pressing the respective keys of the keypad 12. When the SMS-message is completed, a telephone number of the intended recipient is entered by selecting the corresponding telephone
20 number by use of the menu selection keys 14 or in turn, by entering the telephone number by pressing the respective keys of the keypad 12. Finally, the text message is sent using the short message service based on the corresponding selection by means of the keys 14.

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However, in particular with regard to such a SMS-message, the number of characters which can be sent all at once is restricted, such as to 160 characters for example based on GSM.

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Thus, in particular when the user wants to write long messages, with the invention of graphically indicating the remaining amount of characters which can be entered for a common subsequent processing, the user is supported in
35 optimally using the capacity for entering characters within

the edit field 11.

Moreover, the edit field 11 is comprising a text cursor 15,
5 which usually is represented as an all-black box. Since the
attention of the user however, is focused time and again on
the text cursor 15 while he is writing the text, the visual
indication of the still available space in the edit field is
preferably embedded in the cursor 15.

10 Therefore, within the preferred embodiment as depicted in
FIG. 2 the text cursor 15 is used for graphically indicating
the remaining space or even capacity for still entering data,
such as characters, which can be subsequently processed all
15 at once.

The logical connection or functional dependency between the
changeable look of the text cursor 15 and the available
amount of capacity is performed in practice by use of a
20 processor unit integrated within the mobile phone. For
example, the text cursor 15 is subdivided at least into two
areas, such as a black and a white area, wherein the
percentage each of the two areas is changed in functional
dependency to the used capacity or to the still remaining
25 capacity. Thus, for each inputted character a specific amount
of the text cursor 15 is field up with black, in case the
text cursor 15 is white when the entire capacity is
available, or is field up with white, in case the text cursor
15 is black when the entire capacity is available.

30 Accordingly, in Fig. 2, the text cursor 15 is indicating,
that approximately the half of the available edit field 11 is
used, as explained in more detail below.

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FIG. 1 a) and b) are representing two schematic sequences of possible indications that are proportional to the amount of remaining capacity or space for entering data, especially for entering characters, until the edit field 11 or the capacity
5 for a further common processing step is filled up.

Regarding next Fig. 1 a), the assumption that the cursor 15 is represented as an all-black box. Within the inventive approach, such common text cursor black box, as referenced by
10 reference sign 1a, is indicating, that all characters are still available, i.e. 100 % of the maximal capacity or space for entering data is still available.

Regarding the changed look of the cursor 15, as referenced by
15 reference sign 2a, the black painted portion is reduced approximately to the half, whereas a white portion is extended to the half of the graphical cursor box element, in order to indicate that approximately half of the maximal useable field or capacity is already used and hence nearly
20 the half of the capacity is still available.

Correspondingly the changed look of the cursor 15, as referenced by reference sign 3a of FIG. 1 a), is indicating that about 30% of the initial capacity is still available. If
25 the whole graphical element has completely changed its look, such as from black to white, as referenced by reference sign 4a of FIG. 1 a), then no further characters are available, for writing a text.

30 Consequently, the percentage of the black portion of the graphic element, such as the text cursor 15 of FIG. 2, is proportional to the number or the amount of remaining characters, whereas the percentage of the white portion of the graphic element, as depicted in FIG. 1 a) is proportional
35 to the number or the amount of space or capacity already

used.

It is stated however, that other shapes of cursors can be used as well. Moreover, even a separate graphic element which is changing its look in functional dependency to the available space and/or to the space already used, can be integrated into the display of the edit field 11. Thus, it is not necessary to use the cursor itself for graphically indicating the available entry space or capacity.

10

For example FIG. 1 b) is depicting a similar sequence of a kind of pillar which is growing up proportional to the amount of used capacity.

15

Based on the afore mentioned 160 characters to which a SMS-message according to the GSM-standard is restricted, this can be accomplished for instance by subdividing the entire pillar in 160 portions by means of 40 rows with respectively 4 columns. Thus, each portion is representing a capacity amount of 0,625 percent and for each character entered, one of these portions is filed up in an application specific color or user based selected color.

20

Accordingly, if three of the 160 portions of the graphic pillar-like element are already filed up, as schematically indicated by reference sign 1b of Fig. 1 b), approximately 1,875 percent of the entire available capacity is already used. Consequently, the look of the graphical element, schematically referenced by reference sign 2b is nearly filed up to the half and hence, approximately the half of the capacity is used and the half of the capacity is still available. By further entering data or characters, the look of the graphic element is changed via the condition, as referenced by reference sign 3b, indicating that approximately 3/4 of the capacity is used to the look

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referenced by reference sign 4b indicating that the entire space ore capacity is used.

5 Since however, for the graphical indication substantially any kind of graphical element can be used, the inventive scope is not restricted to the use of the text cursor for the graphic element. To put the inventive approach into practice, it is proposed to provide with or for the electronic device a plurality of elements or symbols among which the user of the
10 electronic device may choose a preferred one for the visual graphical indication. Furthermore, the inventive approach is preferably supported or entirely provided by the implementation of a correspondingly designed software.

15 Moreover, in particular with regard to the specific equipment of the respective electronic device, the graphic indication can be realized and/or supported by changing the color, such as for example by going through a specific color range in dependency of the available capacity. As an alternative or in
20 addition the graphic indication can be supported by flashing the element, preferably by indicating the used spaced or capacity by changing the flashing frequency. As a further possibility, the graphic indication can be additionally supported by acoustic signals.

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Claims

1. Method of indicating the amount of data, in particular of characters, which can be entered in an edit field (11) of an electronic device merely allowing a predefined number of entered data for a common subsequent processing, characterized in that the available capacity for entering data in the edit field (11) is graphically visualized (1a, 1b, 1c, 1d, 2a, 2b, 2c, 2c, 15).
2. Method of claim 1, further characterized in that the look of a graphic element (15) associated to the edit field (11) is changed in functional dependency to the available remaining capacity.
3. Method of claim 2, further characterized in that the graphic element (15) is subdivided into two areas, wherein the percentages of the two areas are changed in functional dependency to the available capacity
4. Method of claim 2, further characterized in that the graphic element (15) is subdivided into several sub-portions, each of which is representing a predefined amount of capacity, so that for every amount of capacity already used one of these sub-portions is visually displayed, filled up and/or deleted.
5. Method of any of the preceding claims, further characterized in that the look of a text cursor (15) is changed proportional to the number of remaining characters which can be entered into the edit field (11).

6. Electronic device having an edit field (11), means (12, 14) for entering data and/or characters into the edit field and means for processing a predefined maximal number of entered data and/or characters all at once, comprising a graphic element (15) associated to the edit field (11) for graphically visualizing the space or capacity available in the edit field.
7. Electronic device of claim 6, wherein the look of the graphic element (15) is changeable in functional dependency to the available space or capacity.
8. Electronic device of claim 6 or 7, wherein the graphic element is subdivided into two areas, wherein the percentages of the two areas are changeable in functional dependency to the available space.
9. Electronic device of claim 6 or 7, characterized in that the graphic element (15) is subdivided into several sub-portions, each of which is representing a predefined amount of capacity, and wherein respectively one of these portions is changeable for a character entered.
10. Electronic device of any of claims 6 to 9, wherein the graphical element (15) is a text cursor.
11. Electronic device of any of claims 6 to 10, being a mobile phone, in particular based on a GSM-standard or UMTS-standard.
12. Implementation software product adapted to support and/or to perform a method according to any of claims 1 to 5, especially implemented within a device according to any of claims 6 to 11.

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Abstract

5 The invention relates to the indication of the amount of characters, which can be still entered into an edit field of an electronic device.

10 A main object of the invention is, to provide a new and improved indication of the amount of remaining capacity for entering data in an edit field of an electronic device.

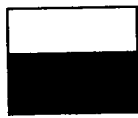
15 The invention proposes to indicate the amount of data, in particular of characters, which can be entered in an edit field (11) of an electronic device merely allowing a predefined number of entered data for a common subsequent processing, by graphically visualized (1a, 1b, 1c, 1d, 2a, 2b, 2c, 2c, 15) the available capacity for entering data in the edit field (11).

Fig. 1

a)



1a



2a

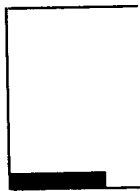


3a



4a

b)



1b



2b



3b



4b

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Fig. 2

